

REMARKS/DISCUSSION OF ISSUES

Claims 1-20 are pending in the application. Claims 1-20 are rejected.

Rejection of claims 1-5, 8-14 and 17-20

Claims 1-5, 8-14 and 17-20 stand finally rejected under 35 U.S.C. 103(a) as being unpatentable over Okumura in view of Steiner.

Okumura discloses a transfective liquid crystal display device comprising a liquid crystal panel (103-106), a polarizer (101) disposed on one side of the liquid crystal panel, a reflective polarizer (108) disposed on the opposite side of the liquid crystal panel, and a backlight assembly (109), whose light source may comprise an array of LEDs (col. 11, line 20).

Claims 1, 8 and 9

As acknowledged by the Examiner, Okumura does not disclose that the LEDs have different light emission wavelengths.

Steiner discloses a backlight for use in a flat panel display backlight consisting of three components, (1) a collimating means, which collimates white light and directs the light at an angle to the surface of the flat panel display, (2) diffraction means which angularly separates the white light into red, green and blue components, and (3) light directing means, for focusing the red, green and blue light components onto the individual red, green and blue color subpixels of the LCD in an aligned fashion.

Steiner also discloses that the light source which provides white light to the collimating means may be provided by three LEDs, one red, one green and one blue.

However, neither Okumura nor Steiner teach or suggest an assembly in which a control circuit for the display device also drives luminous fluxes of the light-emitting diodes in dependence upon an image to be displayed by the display device, as clearly called for by independent claims 1, 8, 9, 17 and 19.

The Examiner has stated that Okumura discloses that the control circuitry also drives the luminous fluxes of the LEDs in dependence on the displayed image, citing col. 10, lines 14-45 of the reference.

However, the cited passage merely points out that the luminance factor of the backlight assembly may be changed by changing the density of the light diffusing elements 504. Since the light diffusing elements were provided by printing white paint (col. 9, lines 65 and 66), their density cannot be varied in dependence on the displayed image.

Moreover, Applicant's claims call for the control circuit to drive the luminous fluxes of the light-emitting diodes, not the density of any light diffusing elements, in dependence upon an image to be displayed by the display device.

Claims 17 and 19

Regarding claims 17 and 19, the Examiner has stated that Okumura discloses a control circuit operable to vary the light intensity of the LEDs in response to an illumination level of the image, citing col. 10, lines 14-45 of the reference.

However, as already pointed out with respect to claims 1, 8 and 9, the cited passage merely points out that the luminance factor of the backlight assembly may be changed by changing the density of the light diffusing elements 504. Since the light diffusing elements were provided by printing white paint (col. 9, lines 65 and 66), their density cannot be varied in dependence on the displayed image.

Moreover, Applicant's claims call for the control circuit to drive the luminous fluxes of the light-emitting diodes, not the density of any light diffusing elements, in dependence upon an image to be displayed by the display device.

Claim 2

Regarding claim 2, the Examiner has stated that Okumura discloses that each set of LEDs having a different emission wavelength is driven in dependence on the illumination level of the display image, citing col. 10, lines 14-45 of the reference.

However, the cited passage does not mention anything regarding differences between or changes to the illumination level of different sets of LEDs.

Claims 3 and 12

Regarding claims 3 and 12, the Examiner has stated that Okumura discloses that each set of LEDs having a different emission wavelength is driven in dependence on the illumination level of the display image on a frame-to-frame basis, citing col. 10, lines 45-53 of the reference.

However, the cited passage does not mention anything regarding differences between or changes to the illumination level of different sets of LEDs, nor anything regarding changes to illumination levels on a frame-to-frame basis.

Claims 4 and 13

Regarding claims 4 and 13, the Examiner has stated that Okumura discloses that each set of LEDs having a different emission wavelength is driven in dependence on the illumination level of the display image on a frame-to-frame basis for each color, citing col. 10, lines 45-53 of the reference.

However, the cited passage does not mention anything regarding differences between or changes to the illumination

level of different sets of LEDs, nor anything regarding changes to illumination levels on a frame-to-frame basis for each color.

Claims 5 and 14

Regarding claims 5 and 14, while neither Okumura nor Steiner teaches or suggests four sets of LEDs of different colors, the Examiner has taken Official notice that a fourth set of LEDs is well-known in the art.

As stated in M.P.E.P. section 2144(3),

Official notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known. As noted by the court in *In re Ahlert*, 424 F.2d 1088, 1091, 165 U.S.P.Q. 418, 420 (C.C.P.A. 1970), the notice of facts beyond the record which may be taken by the examiner must be "capable of such instant and unquestionable demonstration as to defy dispute".

The Examiner's contention that use of four sets of LEDs of different colors is well-known in the art is not capable of instant and unquestionable demonstration as to defy dispute, and thus cannot be supported by taking Official notice, but only by citing a written reference in support thereof.

Claims 10 and 11

Regarding claims 10 and 11, without conceding their patentability per se, these claims are nevertheless patentable by virtue of their dependency.

Accordingly, claims 1-5, 8-14 and 17-20 are patentable over the combination of Okumura in view of Steiner, and the rejection is in error and should be withdrawn.

Rejection of claims 6 and 15

Claims 6 and 15 stand finally rejected under 35 U.S.C. 103(a) as being unpatentable over Okumura in view of Steiner as

applied to claims 1 and 2, and further in view of what was well-known in the art, as exemplified by Epstein.

Epstein discloses that LEDs operate efficiency in the range of about 5-10 lumens per watt (col. 3, lines 38-40). However, Epstein does not teach anything regarding the operational conditions for an LED, e.g., at what wattage an LED is operated. Thus, it is not possible to determine from Epstein's disclosure the actual lumen output of his LEDs.

Accordingly, claims 6 and 15 are patentable over the combination of Okumura in view of Steiner and Epstein, and the rejection is in error and should be withdrawn.

Rejection of claims 7 and 16

Claims 7 and 16 stand finally rejected under 35 U.S.C. 103(a) as being unpatentable over Okumura in view of Steiner as applied to claims 1 and 2, and further in view of what was well-known in the art, as exemplified by Uchiyama U.S. patent 6,448,663.

Uchiyama discloses an array of LEDs (50) mounted on a printed circuit board (90). See, e.g., Fig. 6A.

Without conceding the patentability per se of these claims, claims 7 and 16 are nevertheless patentable by virtue of their dependency, indirectly, on claim 1, for the reasons advanced above.

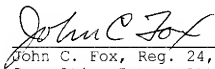
Accordingly, claims 7 and 16 are patentable over the combination of Okumura in view of Steiner and Uchiyama, and the rejection is in error and should be withdrawn.

Conclusion

In conclusion, Applicant respectfully requests that

the Examiner withdraw the rejections of record, allow all the pending claims, and find the application to be in condition for allowance.

Respectfully submitted,


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